

## REMARKS

Claims 1-70 are pending in the subject application. Claims 1-70 stand rejected under 35 U.S.C. § 112, first paragraph, for assertedly lacking a specification that enables a person having ordinary skill in the art to make the invention commensurate with the scope of the claims. Applicants traverse this rejection and submit the attached Declaration under 37 C.F.R. 1.132 and the following remarks to support the position that the specification is enabling.

### A. Declaration under 37 C.F.R. § 1.132

Applicants submit concurrently herewith, a Declaration under 37 C.F.R. § 1.132 by Professor Dennis P. Curran from the Department of Chemistry at the University of Pittsburgh (“the Declaration”). As set forth in the Declaration, Professor Curran is a listed inventor on the subject application and an expert in the field of fluorous chemistry and reaction techniques. The Declaration presents his observations and opinions that the specification, as filed, enables a person of ordinary skill in the art to practice the invention commensurate with the scope of the claims. Applicants respectfully request that the Examiner consider the views set forth in the Declaration when considering the rejection in view of the remarks presented herein.

As noted in the Declaration, based on the disclosure of the method in the related publication from which the subject application is derived (Wende, et al., *Journal of the American Chemical Society*, 2001, 123, 11490-11491 (identified herein as the “JACS Article” and attached to the Declaration as Appendix A)), numerous chemists of ordinary skill in the art have used the invention and applied the methods to other fluorous catalyst systems without undue experimentation. In the Declaration, Professor

Curran demonstrates that the disclosure of the claimed method in the JACS Article has enabled chemists of ordinary skill to practice the claimed invention in numerous related applications. In particular, and as set forth in the Declaration, even though the disclosure in the JACS Article contained less detail than the specification of the subject application, chemists having ordinary skill in the art have successfully applied the claimed method to other fluorous catalysis systems without undue experimentation. For example, the methods of the subject application have been successfully applied to fluorous palladium, fluorous tin, and fluorous ruthenium catalyst systems. (See, the Declaration and the references appended thereto).

Further, as noted by Professor Curran, the subject application does not claim all reactions between a fluorous compound and a chemical reactant, as stated by the Examiner, but instead claims a new method of conducting fluorous reactions in a non-fluorous medium. The specification fully enables one having ordinary skill to practice this method and apply the method to known or new reactions involving fluorous reaction components, as demonstrated in the references appended to the Declaration.

Therefore, as stated by Professor Curran in the Declaration, it is respectfully submitted that the greater detail of the specification (as compared to the JACS article) fully enables any person having ordinary skill in the art to practice the invention commensurate with the scope of the claims without undue experimentation.

#### B. Rejection under 35 U.S.C. § 112, First Paragraph

As set forth in *In re Marzocchi*, 439 F.2d 220, 223-24, 169 USPQ 367, 369-370 (CCPA 1971):

[I]n the field of chemistry generally, there may be times when the well-known unpredictability of chemical reactions will alone be enough to

create a reasonable doubt as to the accuracy of a particular broad statement put forward as enabling support for a claim. *This will especially be the case where the statement is, on its face, contrary to generally accepted scientific principles.* Most often, additional factors, such as the teachings in pertinent references, will be available to substantiate any doubts that the asserted scope of objective enablement is in fact commensurate with the scope of protection sought and to support any demands based thereon for proof. (footnote omitted, emphasis added).

As further set forth in *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988):

The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.

In the Office Action, the Examiner states that “the specification, while being enabling for hydroalkoxation [sic] or hydrosilation reactions does not reasonably provide enablement for all reactions between a fluorous compound and a chemical reactant.” (Office Action, page 2). Applicants respectfully traverse the rejection for at least the reasons that the claimed methods are not contrary to generally accepted scientific principles and the specification enables one having ordinary skill in the art to practice the invention without undue experimentation.

The subject application claims a method for conducting a chemical reaction in a non-fluorous medium using a fluorous compound in the presence of a solid adsorbant containing a fluorous domain and at least one chemical reactant, the method comprising contacting the fluorous compound and the at least one chemical reactant under conditions that form at least one product.

The claimed method relies on generally accepted scientific principles, such as solubilities of compounds in like or dislike solvents/media. For example, in chemistry, generally accepted scientific principles provide that compounds having

similar solubility characteristics tend to be attracted to one another (i.e., that "like dissolves like") and that solubilities of compounds can be affected by changes in reaction conditions. The methods claimed in the subject application utilize the reduced solubility of fluorous compounds in non-fluorous media and the heightened solubility/attraction of the fluorous compounds for the fluorous domain of the solid adsorbant, and manipulate those solubilities by changes in reaction conditions. Thus, it is respectfully submitted that the claimed subject matter does not rely on statements that are "on its face, contrary to generally accepted scientific principles". Instead, the methods apply generally accepted scientific principles to develop novel and non-obvious methods for conducting a fluorous reaction in a non-fluorous reaction medium. Therefore, it is asserted that the claimed methods should not be subject to the "reasonable doubt" discussed by the *Marzocchi* court with regard to certain unpredictable chemical reactions.

Further, as demonstrated in the Declaration, chemists of ordinary skill have practiced the invention without undue experimentation based, at least in part, on the disclosure in the initial report of the claimed invention. Thus, others of ordinary skill in the art have made and used the invention from the disclosure by the inventors in the JACS article coupled with information known in the art without undue experimentation. Under the test set forth by the *Telecommunications* Court, the greater detail of the subject application therefore fully enables the invention commensurate with the scope of the claims.

In view of the remarks set forth herein and the attached Declaration, Applicants respectfully assert that the specification of the subject application is enabling

for the subject matter claimed. Indeed, in the Office Action, the Examiner notes that the specification is at least enabling for hydroalkoxylation and hydrosilation. Applicants assert that chemists of ordinary skill in the art can and are applying the claimed invention to other fluorous catalysts and reaction conditions without undue experimentation based on the related, and less detailed, disclosure in the JACS Article of the methods of the subject application. Therefore, the more detailed disclosure of the subject application is also fully enabled.

Applicants respectfully request that the rejection of claims 1-70 under 35 U.S.C. § 112, first paragraph, be withdrawn and that a notice of allowance be issued for all claims 1-70.

## CONCLUSION

Applicants submit that claims 1-70 of the subject application recite novel and non-obvious methods for conducting a fluorous reaction in a non-fluorous medium. In view of the Declaration of Professor Curran and remarks presented herein, Applicants respectfully submit that claims 1-70 are fully enabled by the specification and that the subject application is in condition for allowance. Accordingly, reconsideration of the rejection and allowance of claims 1-70 at an early date are earnestly solicited.

If the undersigned can be of assistance to the Examiner in addressing issues to advance the application to allowance, please contact the undersigned at the number set forth below.

Respectfully submitted,



Joseph L. Kent  
Registration No. 54,216  
Customer No. 26,285

KIRKPATRICK & LOCKHART NICHOLSON GRAHAM LLP  
Henry W. Oliver Building  
535 Smithfield Street  
Pittsburgh, Pennsylvania 15222  
Telephone: (412) 355-8315  
Facsimile: (412) 355-6501